

# Highland Regional High School Science Summer Assignments

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## Highland AP Chemistry 2009 Summer Assignment

### Welcome to AP Chemistry!

I am so glad you chose to take AP Chemistry, I am looking forward to a great year!

I know you learned a lot of chemistry this year, and in AP we will go deeper, and further in the topics you've already learned, and then go beyond to learn new topics. AP Chemistry is challenging, but rewarding. One of the challenges is the pace. We need to cover the curriculum by mid-April. With this in mind, we need to go at break-neck speed through about the first ten chapters, which ideally should be completed by the winter break. The good news is you have already learned much of this. In order to get off to a good start, I have developed this summer assignment. You have already learned this, it is a review. You need to do this yourself, on your own, without any help except from your notes from this year, your lab notebook, and the text.

**Being “done”:** you will not be “done” with this assignment when you have answered all of the questions and solved all of the problems, showing all work. You will be *done* when you have answered all of the questions and solved all of the problems, showing all work AND have learned AND understood the material, AND are ready to take and pass a test to prove it.

Again, this is a review, so you should be fine.

**Reading for AP:** for this course, reading includes all of the pictures and graphics along with their captions, “boxes” within the body of the text, such as Sample Exercises and Chemistry at Work, margin notes, etc. Read for *understanding*.

**Be prepared to turn in the multiple choice problems and workbook exercises on the first day of class.**

Solubility Rules and Polyatomic Ions- are NOT given when you take the AP exam. You have to know them. To this end, after each chapter below I have included one solubility rule to memorize while you are working with the chapter. Say it to yourself every day for a week, and you'll know it.

### Resources:

This year's class notes, handouts, etc.

Student's Guide: Brown, LeMay and Bursten. *Chemistry: the Central Science*, 10<sup>th</sup> ed. 2006. Upper Saddle River: Pearson, Prentice Hall.

Text: Brown, LeMay and Bursten. *Chemistry: the Central Science*, 10<sup>th</sup> ed. 2006. Upper Saddle River: Pearson, Prentice Hall.

**Assignment: (All work will be collected on the first day of school!)**

**Chapter 1:** Read chapter 1 in the Student's Guide. Complete Exercises 1-21 in workbook on loose leaf paper and complete chapter 1 packet by working all odd problems. Although the answers are listed for the packet problems, you must show all the math when applicable!

*Memorize tables 1.1, 1.2, 1.4 in workbook.*

**Chapter 2:** Read chapter 2 in the Student's Guide. Complete Exercises 1-20 in workbook on loose leaf paper and complete chapter 1 packet by working all odd problems. Although the answers are listed for the packet problems, you must show all math when applicable!

**Chapter 3:** Read chapter 3 in the Student's Guide. Complete Exercises 1-11 in workbook on loose leaf paper and complete chapter 1 packet by working all odd problems. Although the answers are listed for the packet problems, you must show all math when applicable!

**Chapter 4:** Read chapter 4 in the Student's Guide. Complete Exercises 1-15 in the workbook on loose leaf paper and complete chapter 1 packet by working all odd problems. Although the answers are listed for the packet problems, you must show all math when applicable!

Memorize table 4.1 from textbook.

I know this is a lot, but you'll be better off in the long run!  
If you have any problems, email me at [cdunkley@bhprsd.org](mailto:cdunkley@bhprsd.org)

Have a great summer!

Highland Advanced Placement Biology  
Summer Reading Assignment

Name: \_\_\_\_\_  
HR: \_\_\_\_\_

Before the end of the school year, please come to room G101. (The best time would be before or during homeroom, you can use this paper as a pass) You will need to see me and get a copy of your textbook for AP Bio. During the next few months you will need to complete the following assignments:

- Ch. 24- Population Ecology
- Ch. 25- Community Ecology
- Ch. 26- Animal Behavior
- Ch. 27- Behavioral Ecology
- Ch. 28- Dynamics of Ecosystems
- Ch. 29- The Biosphere
- Ch. 30- The Future of the Biosphere
- Ch. 31- Conservation Biology

For each of the above chapters, you should:

- 1) Read the chapter
- 2) Re-read the chapter and prepare an outline of the material covered

These outlines will be collected on the first day of school in September. This will count as two homework and two lab grades.

Your first test of the year will be on this material.

In order to ensure that you get off to a good start, please spend a few hours this summer completing this assignment. If you have any questions or problems, come and see me. If you need to contact me during the summer my school email is: **mcampisi@bhprsd.org**

Thank you,  
Mr. Campisi

Mrs. McGuinn

Summer Assignment... Honors Chemistry

Directions: Read Chapter 1 of the Honors Chemistry textbook ("Chemistry", published by Addison -Wesley); Answer the following:

1. Define the key terms:

Chemistry	organic chemistry
inorganic chemistry	analytical chemistry
physical chemistry	biochemistry
scientific method	observation
hypothesis	experiment
theory	scientific law

2. Complete each blank with a term, short phrase, or number:

Most scientific advances involve little or no \_\_\_\_\_.

A systematic approach is the best way to solve a difficult \_\_\_\_\_.

One logical approach to solving scientific problems is the \_\_\_\_\_.

You can begin scientific problem solving by making a \_\_\_\_\_,

or a proposed explanation for what is observed. You can conduct an

\_\_\_\_\_ to test the hypothesis. If a hypothesis holds up after

repeated experimentation, it becomes a \_\_\_\_\_, which is a broad and

extensively tested explanation of why experiments give certain

\_\_\_\_\_.

A \_\_\_\_\_ is a concise statement that summarizes the results of many observations and experiments.

3. Classify each step in the following application of the scientific method as an observation, hypothesis, experiment, or theory.

- A) An iron ball falls to Earth when you drop it. \_\_\_\_\_
- B) Earth is a giant magnet. \_\_\_\_\_
- C) An iron ball and a piece of wood are dropped at the same time from the same height. \_\_\_\_\_.
- D) The iron ball and wood fall at the same rate. \_\_\_\_\_
- E) The large mass of Earth causes it to exert the same gravitational attraction on any object, regardless of the object's composition. \_\_\_\_\_

4. Which of the following is a scientific law?

- A) A rowboat with passengers rides lower in the water than an empty rowboat.
- B) The chemical compositions of oil and water prevent them from mixing.
- C) The weight of an object,  $w$ , is equal to the gravitational mass of the object,  $m$ , times the gravitational acceleration,  $g$ .  $w = m \times g$

5. Do # 18,19,24,25,28 (p. 25,26)- ANSWERS ONLY

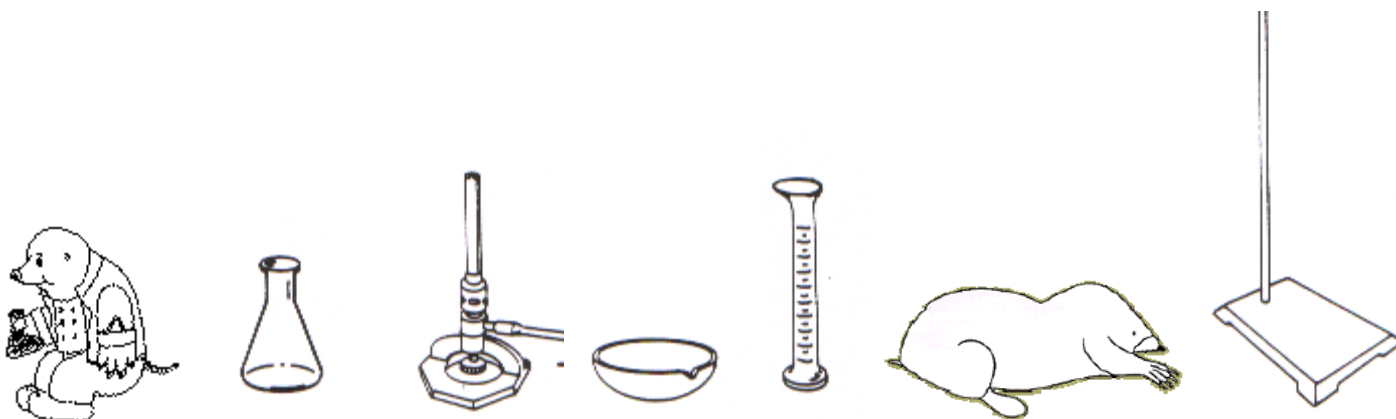
6. Read the article "Research Ethics 101". Write an opinion paper on the article. If handwritten, the paper should be no longer than one side of a sheet of lined paper. If typed, the paper should be no longer than one side of a sheet of 8" x 11" paper, double-spaced, font 12.

7. Read the article "The Quest for a Clean Drink". Article can be found at [www.acs.org/chemmatters](http://www.acs.org/chemmatters) April 2008 edition. Answer questions on separate sheet of paper.

#### The Quest for a Clean Drink

- 1. Why did the people of India and Bangladesh change from surface water to water from tube wells?
- 2. What is the source of arsenic found in water from tube wells?
- 3. How do certain types of soil bacteria (anaerobic) increase the amount of arsenic in water from tube wells?

4. What are some of the detrimental health effects from ingesting too much arsenic in water?
5. What is the chemical function of manganese that is used in the Hussam arsenic filter bucket?
6. What is the chemical function of iron (III) hydroxide in the Hussam filter bucket?
7. How does the SenGupta water filter work?
8. What are the three chemical steps used in the Proctor & Gamble (Souter) device to clean water?



### Honors Laboratory Chemistry

The Honors Lab Chemistry course covers essentially the same content areas as the regular laboratory chemistry course. However, due to the nature of the students enrolled in this course, it is expected to be much more demanding in terms of depth and breadth of material covered. Therefore, a summer assignment has been developed, covering the material from the first chapter of the textbook used in the course. This assignment is attached. It is due the **FIRST** day of school, and will **not** be accepted late.

For a complete list of rules and regulations for honors chemistry, types of assignments, supplies needed for the class, please see my website: <http://www.geocities.com/chocoeus/>  
I post all assignments and their due dates on a weekly basis. You can visit my “blogspot” to see the types of homework assignments I assign during the school year, in addition to your first summer assignment.

Have a relaxing summer, come back to school refreshed and ready to learn some interesting, cool, chemistry!

Mrs. McGuinn



## ***2009 AP Physics Summer Assignment***

### **Welcome to AP Physics!**

Welcome to AP Physics. I am looking forward to a great year. This course will be one of the most challenging courses that you will take while in high school, but if you put in your time and effort you will find the class very rewarding. Due to the very fast pace of this course, I will need you to complete some preparatory activities before you begin. I am trying something new this year by providing you with an online companion for this course so that you can get extra help even when at home. You will find your summer assignment on the website.

### **Instructions for Gaining Access to the AP Physics Web Site**

#### **Step 1:**

***(Note: if you already have a Gmail account, you do not need to create a new Google Account).***

Go to [www.google.com](http://www.google.com). Once the page opens up, you will find a couple of links on the top of the page. Click on the “Gmail” link. When the page opens up, you will have the option to sign in or create a new account. Please create an account. This account will provide you access to all of Google’s free services. In the class, we will often use Google “Sites”, “Groups” and “Docs”. Please check out all of the services to make sure that you are familiar with them before the first day of class.

#### **Step 2:**

Once you have created your Google Account, e-mail me at [tschoening@bhprsd.org](mailto:tschoening@bhprsd.org) and provide me with your Google Account so that I can invite you to the website. Once you are at the website, Click on the “AP Physics” link. Your assignment will be to complete “Unit 1” before the start of school. Click on the “Unit 1” link and instructions and worksheets will be available on this page.

#### **Step 3:**

Check the site weekly for any updates or tips to help you through any difficulties that you may encounter.

Have a great summer and I’ll see you in September.

Mr. Schoening

**Ms. MacArthur Highland APES  
SUMMER READING ASSIGNMENT**

**Ishmael** by Daniel Quinn pub. Bantam/Turner Books

Complete the attached study guide. It is due the day you return to school in September. There will be a Quiz two days after our return.

Any problems or questions my e-mail address is rmacarthur @ bhprsd.org

Have a great summer with Ishmael. Hopefully you will become friends.



7. According to Ishmael, why is our vision of creation and evolution a myth and why doesn't our culture recognize this?

Part 4

8. According to the Takers, what is man's destiny?

9. According to Ishmael, what is the price of enacting this destiny?

Part 5

10. Why, under human rule, has the earth not become a paradise?

Part 6

11. Where should we look for the information on how we ought to live and what will happen if we don't find it?

Part 7&8

12. What four things do Takers do that are not done by any other species in the community of life?

13. What law does every species on earth follow except the Takers, and what is the result of this for humankind?

Part 9

14. Distinguish between the Tree of Life and the Tree of Knowledge of Good and Evil.

15. As the Takers expanded the agricultural revolution what happened to the Leavers?

Parts 10&11

16. How does the 'cultural revolution' of the Takers and Leavers differ and what does Mother culture say about each?

Part 12

17. What happens to people who live in the hands of the gods that will not happen to those who live in the knowledge of good and evil?

18. What will eventually happen to the takers?

19. What does belonging to the world mean?

20. According to Ishmael, what is the only way we will change our behavior?